CURRICULUM FOR TWO YEAR
(FOUR SEMESTER)

POST GRADUATE DIPLOMA COURSE IN


```
=====================================
:      COMPUTER APPLICATION       :
:      Effective from Session     :
=====================================
```

```
====================
```

```
====================
```

```
====================
: Semester System   :
  Revised Syllabus
====================
```


Prepared By

```
=================================
:  Curriculum Development Cell  :
=================================
```


INSTITUTE OF RESEARCH DEVELOPMENT
& TRAINING, U.P., KANPUR

APPROVED BY

```
=================================
:  BOARD OF TECHNICAL EDUCATION   :
: U.P. LUCKNOW,                   :
:CORRECTED AS SYLLABUS COMMITTEE OF:
: B.T.E. MEETING HELD ON 19.04.2017:
=================================
```


1
Corrected and Approved By B.T.E. on Dated 19-04-2017

STUDY & EVALUATION SCHEME
for
TWO YEAR (FOUR SEMESTER) POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS

I SEMESTER (Effective from   )

Lec.	Tutorial	Draw	Lab	Work Shop	Total	SUBJECT	Dur.	Marks	Sess. Marks	Total Marks	Dur.	Marks	Sess. Marks	Total Marks	Grand Total
							Theory Examination				Practical Examination				
4	–	–	4	–	8	1.1 Basics Of Information Technology	2.5	50	20	70	3	50	25	75	145
6	–	–	6	–	12	1.2 Concept of Programming Using C	2.5	50	20	70	3	50	30	80	150
6	–	–	–	–	6	1.3 Computer Organization	2.5	50	20	70	--	--	--	--	70
4	–	–	6	–	10	1.4 Office Automation Tools	2.5	50	20	70	3	50	25	75	145
20	–	–	16		36	TOTAL		200	80	280	–	150	80	230	510

Games/NCC/Social and Cultural Activities/Community Development+Discipline(15+10)   25

Total   535

II SEMESTER

Lec.	Tutorial	Draw	Lab	Work Shop	Total	SUBJECT	Dur.	Marks	Sess. Marks	Total Marks	Dur.	Marks	Sess. Marks	Total Marks	Grand Total
6	–	–	4	–	10	2.1 Operating system	2.5	50	20	70	3	50	30	80	150
6	–	–	4	–	10	2.2 Data Communication & Computer Network	2.5	50	20	70	3	60	30	90	160
4	–	–	4	–	8	2.3 Web Technology-I	2.5	50	20	70	3	70	35	105	175
5	–	–	5		10	2.4 Data Structure using C	2.5	50	20	70	3	60	30	90	160
21	–	–	17		38	TOTAL		200	80	280	–	240	125	365	645

Games/NCC/Social and Cultural Activities/Community Development+Discipline(15+10)   25

Total   670

Note:- (i) Each period will be of 50 minutes duration.
      (ii) Each session will be of 16 weeks.
      (iii)Effective teaching will be atleast 14 weeks.

Corrected and Approved By B.T.E. on Dated 19-04-2017

III SEMESTER

Curriculum						SUBJECT	Scheme of Examination							
Periods Per Week							Theory				Practical			Gra-nd
Lec.	Tutorial	Draw	Lab	Work Shop	Total		Examination		Sess. Marks	Total Marks	Examination		Sess. Marks	Total Marks	Tot-al
							Dur.	Marks			Dur.	Marks			
8	–	–	8	–	16	3.1 Java Programming	2.5	50	20	70	3	60	30	90	160
6	–	–	6	–	12	3.2 Database management system	2.5	50	20	70	3	60	30	90	160
6	–	–	6	–	12	3.3 Web Technology-II	2.5	50	20	70	3	60	30	90	160
6	–	–	–	–	6	3.4 E-Commerce	2.5	50	20	70	–	--	--	--	70
26	–	–	20		46	<---------TOTAL---------->	---	200	80	280	--	180	90	270	550

Games/NCC/Social and Cultural Activities/Community Development+Discipline(15+10)   25

Total: 575

IV SEMESTER

Lec.	Tut	Dr	Lab	Work Shop	Tot	SUBJECT	Dur.	Marks	Sess. Marks	Total Marks	Dur.	Marks	Sess. Marks	Total Marks	Grand Total
6	–	–	6	–	12	4.1 Computer Based Accounting	2.5	50	20	70	3	75	40	115	185
4	–	–	4	–	8	4.2 Computer Hardware And Maintenance	2.5	50	20	70	3	75	40	115	185
4	–		–	–	4	4.3 Environmental Education(*) And Disaster Management	2.5	50	--	--	--	--	--	--	--
		–	8		8	4.4 i.Project		–	–	–		80	40	120	120
						ii.Industrial Trainning (One Month)						40	20	60	60
						iii.Seminar (Any Computer Based Topic) (No External Examination)							25	25	25
14	–	–	18		32	<---------TOTAL---------->	---	100	40	140	--	270	165	435	575

Games/NCC/Social and Cultural Activities/Community Development+Discipline(15+10)   25

Total: 600

(i) Each period will be of 50 minute duration.
(ii) Each sesson will be of 16 weeks.
(iii) Effective teaching will be atleast 14 weeks.   50% Carry Over of I & II Sem.   603
(v) Four weeks structured &supervised,branch specific,task oroented 100% of III & IV Semester   1175
    Industrial/field exposure to be organised during summer vacation,after   Aggregate Total   1778
    II semester
(vi) Students shall submit a report.There shall be 60 marks for this
    exposure.These marks shall be awarded by the project examiner in the
    IV Semester(Examination marks:40,Sess.marks:20
(vii)(*) It is compulsory to appear & to pass in examination, But marks will
    not be included for division and percentage of obtained marks.
(viii) At least 1 seminar should be organised at the institute level with in the session,
    Participation of each student is compulsuory and sessional marks for this should be
    allotted to the student.

Corrected and Approved By B.T.E. on Dated 19-04-2017

C O N T E N T S

DETAILED COURSE CONTENTS

I Semester

II Semester

III Semester

IV Semester

Corrected and Approved By B.T.E. on Dated 19-04-2017

MAIN FEATURES OF THE COURSE

TITLE OF THE COURSE   : Post Graduate Diploma In Computer
                                 Application

DURATION OF THE COURSE   : Two years (Four Semester)

TYPE OF THE COURSE   : Full Time Institution Based

PATTERN   : Semester System

INTAKE   : 60

AGE   : Minimum 17 Years, No Upper Age
                                 Limit

ENTRY QUALIFICATION   : Graduate in any discipline (With
                                     a minimum of 50% marks)

MODE OF ADMISSION   : The   admission   are   made   through
                                Entrance   Test   conducted   by   Joint
                                Entrance   Examination   Council
                                U.P.Lucknow

Corrected and Approved By B.T.E. on Dated 19-04-2017

LIST OF EXPERTS

List of experts who contributed to Change the of curriculum
of Two Years Diploma in Computer Application to Semester
System on dated 25.07.2016 at I.R.D.T.U.P., Kanpur

1. Shri Arun Kumar   HOD Computer Science Engg. GGP Jhansi
2. Shri Neeraj Kumar   Lecturer IT GP Kanpur
3. Shri Sumit Babu   Lecturer CS GP Kanpur
4. Miss Puja saxena   Lecturer IT GP Kanpur
5. Shri Prashant Shakya   Lecturer IT GP Mahoba
6. Shri Gaurav Kishor Kanaujiya   Lecturer(IT)I.R.D.T.,Kanpur

LIST OF EXPERTS

List of experts who contributed to Change the of curriculum
of Two Years Diploma in Computer Application to Semester
System on dated 19.07.2016 and 08.08.2016 at I.R.D.T.U.P., Kanpur

1. Shri LS Yadav   Principal GP Unnao
2. Shri Arun Kumar   HOD Computer Science Engg. GGP Jhansi
3. Shri Shyam Lal   HOD Computer Science Engg. GP Kanpur
4. Shri Harsh Jaiswal   Sr. Software Developer Actolap Solutions
                                    India Private Limited Noida
4. Shri Vaibhav Kishore   Lecturer CS GP Unnao
5. Rupali Singh   Lecturer CS GP Kanpur
6. Shri Prashant Shakya   Lecturer IT GP Mahoba
7. Shri kausalendra Kumar   Lecturer IT AITH
8. Shri Gaurav Kishor Kanaujiya   Lecturer(IT)I.R.D.T.,Kanpur

Corrected and Approved By B.T.E. on Dated 19-04-2017

IV. NEED ANALYSIS :

With the development of civilisation, human needs too have been rising spirally. fulfillment of these needs requires their right identification, simulation and analysis of lot of relevant informations. Thus, the individual responsibilities of every responsible citizen have grown up to such a height as it has became difficult for him to handle them successfully. Human memory too has its own limitations. So, here comes the computer to help him in all kinds of decision making, whether it is highly complicated research work, war strategy, market speculations or day-to-day need of human life, etc. As a matter of fact, every individual activity involves some decision making. So the computer is the need of organizations as well as of an individual being. It will not be exaggeration if we say that it today is "Computer era". So is the need for developing a course for computer applications at diploma level. The course aims at developing personnel, capable of writing programmes in different high level languages, using the personal computer software available in the market, using the computer for scientific, engineering, research and development works as well as for commercial applications. It is supposed that such personnel will not face any dearth of employment because of ubiquitious use of computers.

The syllabus for diploma in Computer Applications has been developed to meet the above mentioned aims. Obviously achievement of any aim requires knowledge of the means and procedures of their utilization. With this view, various courses have been carefully selected and their length and

7

Corrected and Approved By B.T.E. on Dated 19-04-2017

depth decided by the experienced experts of world of work.

V. PROFILE DEVELOPMENT :

A tool in the form of questionnaire for getting information about job potential, job opportunities, man-power requirements and job activities of diploma holders in Computer Applications was designed and sent to various organizations, industries, higher technological Institutions and Polytechnics. The response was not very much encouraging. So, efforts were made to get feed back through mutual interaction with the experts of above organizations, industries, higher technological institutes and polytechnics. The feed back, thus received was discussed and analyzed in a workshop and a draft curriculum was prepared adopting the following procedures :

1. Listing job potential and job activities.

2. Analyzing activities, knowledge and skills.

3. Determining course objectives.

4. Planning horizontal and vertical organizations of the subjects.

5. Developing study and evaluation scheme.

6. Development of detailed course content and coverage time keeping in view the knowledge and skill requirements.

7. Determination of resource input in the form of human resource, space, equipment, etc.

The so prepared curriculum was sent for comments of experts of various higher technological institutions and senior personnels in industries. The suggestions, thus received, and those through personal contacts, have been incorporated where found suitable. Finally, the revised curriculum has been put before an expert Committee approved by the "Government of Uttar Pradesh" for its final approval. The Committee's suggestions, though very nominal, too have been respectfully incorporated to give it its final shape.

It is hoped that this revised curriculum for Diploma in Computer Applications will be useful in producing suitable middle level manpower for the world of work.

8

Corrected and Approved By B.T.E. on Dated 19-04-2017

JOB POTENTIAL:

INTRODUCTION:

Computer industry is rapidly growing in India. There is a great need for personnel with specific knowledge and skills in this field. One can make distinction between those who manufacture and maintain computer system and those who use it. Those personnel who are involved in manufacture, testing, maintenance and installation of computer systems are generally called as system personnel. Those who use the computer system are generally known as user group or Applications group. The present curriculum is intended to produce the Application Programmers. The application programmers must have knowledge of the area of application as well as the knowledge of programming. Hence a Post Diploma Course in Computer Applications is suggested for the diploma pass outs in any discipline of Engineering and Technology.

JOB OPPORTUNITIES:

At the completion of this course, the student is trained for the following jobs/capacities :

1.   System Operator

2.   Programmer/Junior Programmer/Application Programmer.

JOB DESCRIPTION:

Following are the activities of a System Operator in the Computer Centres :

1.   to operate the computer system and peripherals.

2.   to help the users in operating the system.

3.   to allocate resources to the users.

4.   to schedule the work of the computer centre.

5.   to monitor the environment of the computer centre.

6.   to maintain log of the system.

7.   to maintain preventive maintenance schedules.

8.   to inform the appropriate persons in case of system
      break down and run system checks for proper working
      after it is set right.

9

Following are the activities of Programmers/Junior Programmers/Application Programmers.

1. to write working programmes from the specifications or flow charts prepared by the Programmer/System Analyst.

2. to write Flow Chart and Programmes independently for simple application

3. to execute programmes (Enter the programme, Edit the programme, Save the programme, Link the programme and Run the programme).

4. Debug the programmes.

5. Analyse a data processing problem to select an appropriate algorithm and construct a well structured computer programme.

```
                        ACTIVITY   ANALYSIS


-----------------------------------------------------------------------
Activity                  Knowledge                     Skills
-----------------------------------------------------------------------
1. Operation the       i  Principles of working of   i  Operation of Computer
   computer    system     computers in terms of
   and peripherals        different blocks.

                       ii Principles  of  working  of  ii Operation of
                          different  peripherals  like     different periph-
                          printer,   plotter,   floppy     erals
                          drive,   disc  drive,   tape
                          drive,  terminal,  off  line
                          data    entry    devices    &
                          specific  types  of  control
                          devices.

                       iiiConcept of data bus,  data
                          transfer,synchronization,
                          band rate.

                       iv Precaution  in the  use  of
                          Computer system and  periph-
                          erals.

                        v Principles of  sharing  the
                          system resources.


2. Helping the users   i  Operating system commands   i  Operation of
   in operating the sys-                                  computer and peri-
   tem.                                                   pherals

                       ii Concepts of peripherals     iiExecution procedures
                          specifications like speeds
                          and capacotoes.

                       iiiExecution procedures.

                       iv Error message interpretation


3. Allocation resour-  i  Procedure    for    passward i  Practice  in runn-
   ces to the users.      allocation, time allocation     ing different kinds
                          and priority allocation.        of programmes
```
11
Corrected and Approved By B.T.E. on Dated 19-04-2017

```
4. Scheduling the work i Estimating the time required
   of computer centre    to   run    various   jobs
                         including    the   peripheral
                         time and job scheduling.
5. Monitoning the env- i Concept   of    effects   of
   ironment of computer  temperature, humidity,  dust
   centre                and  static charges  on  the
                         system and peripherals.
```

```
                  ii Appreciation of the need to
                     monitor   these   parameters
                     regularly.

                  iiiProgrammes   for   monitoring
                     and tallring appropriate par-
                     ameter.

6. Maintaining the log i Prodecure of maintaining the
   book of the system    log register for the use  of
                         the system  and  peripherals
                         for     the     purpose     of
                         maintenance.

7. Maintaining the pre-i Different  maintenance  and  i Practice in runn-
   ventive maintenance   preventative schedules.        ing diagnostics
   schedules

                  ii Procedure   of the follow  up
                     actions regarding preventive
                     maintenance.

                  iii Procedure of  checking   the
                      working of the system.
                      (Run diagnostics)

8. Informing the appr- i Understand the breakdown in i. Fault location
   opriate person in      the  computer system and  at
   case of system break   decide  whether fault is  in
   down and run system    hardware or software.
   checks for proper
   working after the
   system is set right.

                  ii Run diagnostics              ii. Practice in run-
                                                       ning diagnostics

9. Analysing a data    i Principles   of   system   i. Practice in num-
   processing problems   analysis,    design    and    eric and nonnum-
                         structured programming.       eric  computat-
                                                       ion.
```

Corrected and Approved By B.T.E. on Dated 19-04-2017

Activity	Knowledge	Skills
	ii Computational errors and their estimation.	ii. Practice in error analysis.
	iii Data organization and file handling techniques.	iii. Practice in writing programmes & executing them
10. Writing working programmes from the given specifications	i Concept of flow charts.	i. Practice in writing programmes using appropriate languages.
	ii Writing programmes in different languages.	ii. Practice in executing programmes on computer.

Activity   Knowledge   Skills

Activity	Knowledge	Skills
		iii. Practice in debugging the programmes
11. Executing the programmes(Enter,Edit, Save, Link and Run the programmes)	i Operating system and its commands.	i. Practice in executing programmes on computer.
	ii Execution procedures.	
	iii Error message in interpretation.	
12. Debugging the Programmes	i Error messages	i. Practice in debugging the programmes
	ii Debugging procedures	
	iii Reference manual.	

13

COURSE OBJECTIVES:

The preceding section outlines the knowledge and the skills essential for a middle level computer applications personnel. In this section, all skills and knowledge are summarised. Course Objectives derived from the knowledge and skills required to perform different activities, lay foundation for planning educational programmes. All the objectives which deserve greater weightage are marked with asterisk. Following are the course objectives :-

1. KNOWLEDGE

    On completion of the course, the student will acquire knowledge :

    -   to understand the functioning of different blocks of computer system ;

    -   to understand the functioning of different peripherals;

    -   of different computer languages like BASIC, 'C', COBOL and PASCAL language , Fortran, C++

    -   of analysis of a given problem and formulate an algorithm for solving it on a computer ;

    -   in related Mathematics so as to develop skill in analysing scientific/tehnological problems and programmes ;

    -   to apply the principles and techniques of data processing to data processing environment ;

    -   to on the computer centre. Organise computer cantre activities and maintain the records and documents ;

    -   to comprehand the total computer activities and grow with experience.

2. SKILL:

    -   to write programmes in good style, debug and document them and

    -   to operate computer and its peripherals.

Corrected and Approved By B.T.E. on Dated 19-04-2017

1.1 Basics of Information Technology
(Common to Diploma In Information Technology, Diploma In Computer Science & Engineering)

```
                                                    L  T  P
                                                    4  -  4
```

Rationale

      Computers have become an integral part of modern industrial atmosphere. Every technician is supposed to be aware of the application of computers. A student having knowledge of popular software and computer peripherals will prove useful to accept any challenge in day today working.

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Introduction of Information Technology	6	-	-
2.	Component of Information technology	6	-	-
3.	Data Representation	12	-	-
4.	Emerging Trends	6	-	-
5.	Components of Computers	6	-	-
6.	Mobile Computing	8	-	-
7.	Introduction to Cloud Computing & Virtualization	12	-	-
		56	-	56

1.   Introduction of Information Technology

    Definition Of Information, difference between data and information, need for information, qualities of information, value of information, categories of information, level of Information. Use of Information Technology in Office Automation, Computers & Its Types.

2.   Components of Information Technology:

    Components Hardware & its Functioning – Input Unit, Control Processing Unit, Output Unit, Types of Input Units & Output Units Computer Software – Types of Software, System Software, Application Software.

3.   Data Representation :

    Binary Number System, Conversion from Decimal to Binary, Conversion from Binary to Decimal, Hexadecimal and Octa decimal No. System, Memory Addressing and its

15

Corrected and Approved By B.T.E. on Dated 19-04-2017

Importance, ASCII and EBCDIC coding System.

4. Emerging Trends in Information Technology –

    Concepts of Networking and Local Area Networking, Advanced
    Input/Output Devices and their use(MICR,OCR, Scanners, Light
    pen, Plotters, Microfilms, Rewritable, CD-ROMS ,Multimedia,
    Video Conferencing, Tele Conferencing .

5. Components of computer

    Types of PC e.g. Desktops, Notebooks, Palmtops,
    Memory System of a PC, Primary Memory, RAM(Random Access
    Memory, ROM(read only Memory), Secondary Memory, Types of
    Secondary Storage, Access Mechanism of storage Devices, PC
    setup and ROM-BIOS, Elementary Trouble shooting.

6. MOBILE COMPUTING :

    Introduction, Personnel Communication Services (PCS), Global
    System Mobile Communication (GSM), GPRS, Mobile Data
    Communication, WAP, 3G Mobile service.

7. Introduction to Cloud Computing & Virtualization:

    From Mainframe to cloud, benefits of cloud computing, grid
    computing, hardware virtualization, essentials of cloud
    characteristics, challenges , cloud economics, cloud types
    and service models, cloud computing platforms, concept of
    virtualization, storage system architecture in cloud
    computing, global risks and compliance aspects in cloud
    environment, data security risk.

LIST OF PRACTICALS

1. Given a PC, name its various components and list their
functions

2. Identification of various parts of a computer and
peripherals

3. Practice in installing a computer system by giving
    connection
4. DOS Commands (internal / external) e.g. TYPE, REN, DEL,
    CD, MD, COPY, TREE, BACKUP

5.   Exercises on entering text and data (Typing
    Practice using any tutor)

6. Features of Windows as an operating system

16
Corrected and Approved By B.T.E. on Dated 19-04-2017

```
         -            Start
          -                Shutdown and restore
          -                Creating and operating on the icons
          -                Opening closing and sizing the
windows
          -                Using elementary job commands like
- creating,    saving,    modifying,
                          renaming, finding and deleting a
file
          -                Creating and operating on a folder
          -                Changing setting like, date, time
color  (back ground and fore  ground)
          -                Using short cuts
          -                 Using on line help
```

Corrected and Approved By B.T.E. on Dated 19-04-2017

1.2 CONCEPT OF PROGRAMMING USING C

(Common to Diploma In Information Technology, Diploma In Computer Science & Engineering)

```
                                        L    T    P
                                        6    -    6
```

Rationale :

For solution of different problems, C is a very powerful high level language. It is widely used in research and engineering problems. A software technician must be aware of this language for working in computer environment.

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Concept of Programming	8	-	
2.	Introduction to Programming in C	10	-	-
3.	Fundamentals of C Programming	10	-	
4.	Conditional Program Execution	10	-	
5.	Function	10	-	
6.	Arrays	10	-	
7.	Pointers	10	-	
8.	Programming in C++	16	-	
		84	-	84

DETAILED CONTENTS

1. CONCEPT OF PROGRAMMING:

    Concept of Flowcharting, algorithm, programming, Structured
    Programming Various techniques of programming, Use of programming.

2. INTRODUCITON TO PROGRAMMING IN C:

    Standard I/o in C, Fundamental data types- Character types, Integer, Short, Long, Unsigned, Single and Double floating point, Storage classes – Automatic, Register, Static and External, Operators and Expression using numeric and relational operators, Mixed operands, Type of conversion, Logical operators, Bit operators, Assignment operator, Operator precedence and associatively.

3. FUNDAMENTALS OF C PROGRAMMING :

    Structure of C program, writing and executing the first C program, components of C language, Standard I/O in C.

18
Corrected and Approved By B.T.E. on Dated 19-04-2017

4. CONDITIONAL PROGRAM EXECUTION :

Applying if and switch statements, nesting if and else, use of break and default with switch, program loops   and iterations: use of while, do while and for loops, muliple loops variables, use of break and continue statement.

5. FUNCTIONS :

Introduction, types of functions, functions with array, passing values to functions, recuresive fuctions.

6. ARRAYS :

Array   notation   and   representation,   manipulating   array elements, using multi dimentional arrays, Structure, union, enumerated data types.

7. POINTERS :

Introduction,   decaration,   applicaitons,   File   handling, standard C preprocessors, defining and calling   macros, conditonal compilation, passing values to the compiler.

8. Programming in C++

What is object-orientation, area of object technology,C++, getting   to   grips   with   C++(data   types,escape sequence,characters,   variables,   operator,   notation, Arrays,Function   conditional statements.call by value,call by   reference.Pointer : C++ memory map, dynamic allocation   pointers,pointers   with arrays.Structure,structure with arrays,passing, structure of function.Enumerated data types, Inherentance, apolymorphism & Overloading.

                    List of Experiments
            (Using GCC/Turbo/Borland compiler techniques)

   1. WAP to Print an Integer Entered by the User
   2. WAP to Add Two Integers
   3. WAP to Multiply two Floating Point Numbers
   4. WAP to Find ASCII Value of a Character
   5. WAP to Swap Two Numbers
   6. WAP to Check Whether a Number is Even or Odd
   7. WAP to Find the Largest Number Among Three Numbers
   8. WAP to Check Leap Year
   9. WAP to Find GCD of two Numbers
   10.   WAP to Find LCM of two Numbers
   11.   WAP to Display Fibonacci Sequence
   12.   WAP to Count Number of Digits of an Integer

Corrected and Approved By B.T.E. on Dated 19-04-2017

13.   WAP to Check Whether a word is Palindrome or Not
14.   WAP to Check Whether a Number is Prime or Not
15.   WAP to Make a Simple Calculator Using switch...case
16.   WAP to Display Prime Numbers Between Intervals Using Function
17.   WAP to Check Whether a Number can be Express as Sum of Two Prime Numbers
18.   WAP to Find the Sum of Natural Numbers using Recursion
19.   WAP to Find the Length of a String
20.   WAP to Concatenate Two Strings
21.   WAP to Find Largest Element of an Array
22.   WAP to Add Two Matrix Using Multi-dimensional Arrays
23.   WAP to Access Elements of an Array Using Pointer
24.   Write a C++ program to take user input for ten numbers and then display the average of these numbers.
25.   Write a C++ to make a simple calculator that performs addition, subtraction, multiplication and division using used defined functions.

Corrected and Approved By B.T.E. on Dated 19-04-2017

1.3 COMPUTER ORGANISATION

```
                                      L      T      P
                                      6      -      -
```

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Introduction To Computer Organisation	12	-	-
2.	C.P.U. & Mathematical Logic	12	-	-
3.	C.P.U. Organization	15	-	-
4.	Computer Arithmetc	15	-	-
5.	Input-Output Organization	15	-	-
6.	Memory Organization	15	-	-
		84	-	-

DETAILED CONTENTS

1. INTRODUCTION TO COMPUTER ORGANISATION:

    Basic computer organization : Functional units operationla concepts, System buses and instruction cycle, CPU organization, Memory subsystem organization : Memory location, Address and encoding of infermation, Types of memory, Internal chip organization.

2. C.P.U.& MATHEMATICAL LOGIC

    Processor Bus Organization,CPU Architecture Arithmetic Logic Unit, Stack Organization, Instruction formats, Addressing Modes, Data transfer manipulations, Program Control,Interrupt, Microprocessor Organization, Parallel processing. Logic gates, Boolean Algebra, Map simplification.

3. CPU ORGANIZATION :

    Register Organization : General register organization, Stack organization, Programmer visible register, Status and control register. Microperations : Register transfer, Bus and Memory transfer, Arithmetic, Logic and shift microperation. Control Unit : Structure of Control Unit, Hard wired control unit. Case Study : 8085 Microprocessor.

4. COMPUTER ARITHMETIC :

    Addition and substraction, Multiplication algorithms, Division algorithms, Floating point arithmetic operations.

21

5. INPUT OUTPUT ORGANIZATION :

   I/O devices : Accesing, I/O interfaces, Asynchronous data transfer : Strobe control, Hand shaking, Modes of transfer : Programmed I/O, Interrupt - Initiated I/O, DMA interrupt hardware and priority I/O processes.

6. MEMORY ORGANIZATION :

   Memory hierarchy, Main memory : RAM and ROM, Memory address map, Auxiliary memory. Cache Memory : Associative memory, Virtual memory concept.

LIST OF BOOKS

1. Patterson - Computer Organization adn Design- Elsevier Pub. 2009

2. William Stalling - Computer Organization - PHI

3. Cravice, Hamacher & Zaky - Computer Organization - TMH

4. Mano - Computer Organization - PHI

5. John P Hays - Computer Organization- McGraw Hill

6. Tannenbaum - Structured Computer Organization- PHI

1.4 OFFICE AUTOMATION TOOLS

(Common to Computer Science & Engineering, Diploma in Computer Information Technology)

```
                                        L   T   P
                                        4   -   6
```

Rationale :

The PC's are gaining their image as personal assistants to every individual in day today life. It is only because of the softwares like Electronic spread sheet, Data base and Word Star,Without these this image of the pc's is of no worth.

TOOLS : Following tools can be used for this subject
        Libre Office, Open Office, MS Office

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time L	T	P
1.	Word Processing	14	-	-
2.	Spreadsheets	14	-	-
3.	Presentation	14	-	-
4.	Electronic Mail	14	-	-
		56	-	84

DETAILED CONTENTS

1. WORD PROCESSING:

        File : Open, Close, Save and Find File, Print and Page
                Setup
        Edit : Cut, Copy, Find, Replace
        Insert: Page Insert, Page No., Symbole
        Font : Paragraph, Tabs, Boder & Shading, Change Case
        Tools : Spelling, Mail Merge
        Table : Insert Table, Delete Cells, Merge Cell, Sort Text

2. SPREADSHEET:

        File : Open, Close, Save and Find File, Print and Page
                Setup
        Edit : Cut, Copy, Find, Replace, Undo, Redo
        Insert: Cell, Row, Worksheet, Chart
        Format: Data, Sort, Filter, Form, Table

3. PRESENTATION

        File   : New,Open,Close,Save as HTML,Pack and
Go,Page
                   setup,Send to ,Properties
        Edit   : Cut, Copy, Find, Replace, Undo, Redo,Duplicate.

23

Corrected and Approved By B.T.E. on Dated 19-04-2017

```
        View      :
Slide_Outline,Slide_sorter,Notepage,Slideshow,Master,
                Black & white slide,Toolbars,Ruler ,Guides
        Insert    : New slide,Duplicate slide,Picture,Text
box,Movies
                & sound,Hyperlink.
        Format    : Font,Bullet,Alignment,Line spacing,Slide layout.
        Tool      : Power  point,Presentation &   conference,Expand
                slide,Macro,customise.
        Slide show: View show,Rehearse timing,Naration,View on two
                screen ,Active buttons,Preset Animation,Custom -
                animation,Slide transition.
        Window    : New window,Arrange icons,Fit to page,Cascade.
```

4.   Electronic Mail :

-    Composing an Email Message
-    Working with Address Book
-    Automatically Add contents to Your Address Book
-    Reading Email using Outlook Express
-    Reading a message
-    Checking for New Messages
-    Reading file Attachment
-    Taking Acting on a Messages
-    Web Based Email
-    Advantage os using Web Based Email.

                    List Of Practicals

1.   Create a document using funcation :Saveas, Page Number,
      Bullets adn Numbering.

2.   Create a document using styles and formatting option

3.   Create a document using different fonts.

4.   Create a document using the function page setup and page
      preview, then print that document.

5.   Create a table and perform operation in it.

6.   Create a table, chart in excel and implement all formula as
      addition, substraction, multiplication and division.

7.   How to use mail merge in MS Word.
8.   Create a Power Point presentation using slide designing.
9.   Create, Save and Print the Power Point Presentation.
10.   Create a Power Point Presentation using Clipart, Word Art
      Gallery and then add transition and animation effect.

                        24

LIST OF BOOKS

1. Microsoft Office 2010 For Dummies By Wallace Wang
2. 2007 Microsoft Office System Plain & Simple by Jerry Joyce- Microsoft Press
3. Office XP : The Complete Reference- Stephen L. Selson - Tata McGraw Hill Education.
4. Working in Microsoft Office - Richard Mansfield - Tata McGraw Hill Education.

Corrected and Approved By B.T.E. on Dated 19-04-2017

II Semester

2.1 OPERATING SYSTEM

(Common to Computer Science & Engineering, Diploma In Information Technology)

```
                                          L   T   P
                                          6   _   4
```

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Introduction	14	-	-
2.	Management of Operating System	40	-	-
3.	Case Study	30	-	-
		84	-	56

DETAILED CONTENTS

1.   Introduction

Evolution of Operating, Computer system overview, characteristics of operating system, GUI, CUI, Single user, Multi user operating system Time Sharing and Real Time System.

2.   Management of Operating System :

A.   Process Management - Process concept, Process schedule, Process Synchronization, Inter process communication, CPU schedulaing and dead lock.

B.   Memory Management - Main memory, Contigunous memory allocation, Segmentation, Paging, Virtual memory, Demand paging, Page replecement, Allocation, Threasing.

C.   Input Output Management - Mass storage structure, Overview, Disk scheduling and Management.   +

D.   File Management - File concepts, File system and structure, Directory structure.

3.   CASE STUDY :

Linux and Unix basic concepts, system administration requirement for Linux, System Administration

List Of Practical's
 I. Practices on followings commands using Linux:

1.   File handling commands:
      mkdir,ls,cd,pwd,vim,cp,mv,rm,find,history
2.   Text Processing: cat,echo,grep,wc,sort

26

3. Editor commands:kate,gedit,
4. System administration: chmod,chown,su,passwd,who
5. Process management: ps,kill,bg,fg,jobs,
6. Archival:tar,zip,unzip
7. Network: ssh,scp
8. File system:fdisk,mount,umount,du,df,quota
9. Advance commands;reboot,poweroff,sed,awkfind,locate

II. Practices on commands using UNIX:

LIST OF BOOKS

1. Milenekovie - Operating System Concept - McGraw Hill

2. Petersons - Operating System - Addision Wesley

3. Dietal - An Introduction To Operating System- Addision Wesley

4. Tannenbaum - Operating System Design adn Implementation -PHI

5. Gary Nutt- Operating System, A Modern Perspective- Addision Wesley

6. Stalling, Willium - Operating System - Maxwell Macmillan

7. Silveschatza, Peterson J - Operating System Comcpts - Willey

8. Crowley - Operating System - TMH

9. UNIX Concepts and Applications, 4th Edition, Sumitabha Das-Tata McGraw Hill

10. UNIX and Shell Programming, Behrouz A Forouzan and Richard F Gilberg - Thomson Course Technology.

11. Unix Shell Programming - Y Kanetkar - BPB Publication

Corrected and Approved By B.T.E. on Dated 19-04-2017

2.2 DATA COMMUNICATION AND COMPUTER NETWORKS

(Common to Diploma In Information Technology, Diploma In Computer Science & Engineering)

	L	T	P
	6	-	4

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Topic 1	12	-	-
2.	Topic 2	9	-	-
3.	Topic 3	12	-	-
4.	Topic 4	9	-	-
5.	Topic 5	12	-	-
6.	Topic 6	9	-	-
7.	Topic 7	12	-	-
8.	Topic 8	9	-	-
		84	-	56

DETAILED CONTENTS

1.   OVERVIEW OF DATA COMMUNICATION AND NETWORKING :

Introduction; Data Communication; Components, data representation (ASCII, ISO, etc.). Direction of Gata Flow (Simples, Half duplex, Full duplex), Network; Distributed processing, Network criteria, Physical structure (Types of connection, Topology), Categories of network (LAN, MAN, WAN); Internet; Brief history, Internet today; Protocols and standards; Reference models; OSI reference model TCP/IP reference model, their comparative study.

2.   PHYSICAL LAYER :

Overview of data (Analog and Digital), Singnal (Analog and Digital), Transmission (Analog and Digital) and Transmission media (Guided and Non-guided); TDM, FDM, WDM; Circuit switching; Time division and space division switch, TDM bus; Telephone network.

3.   DATA LINK LAYER :

Types of errors, Framing (Character and bit stuffing), Error detection and Correction methods; Flow control; Protocols Stop and wait ARQ, Go-Back, NARQ, Selective repeat ARQ, HDLC.

Medium Access Sub Layer :

28

Point to point protocol, LCP, NCP, FDDI, Token bus, Toke ring; Reservation, Polling, Concetration; Multiple access protocols, CSMA,CSMA/CD, FDMA, TDMA, CDMA; Traditional Ethernet, Fast Ethernet.

4.   NETWORK LAYER :

Internetworking and devices : Repeaters, Hubs, Bridges, Switches, Router, Gateway; Addressing : Internet address, Classful address, Subnetting; Routing : Techniques, Static vs. dynamic routing, Routing table for glassful address; Routing algorithms: Shortest path algorithm, Flooding, Distance vector routing, Link state routing; Protocols ARP, RARP, IP, ICMP, IPV6; Unicast and multicast routing protocols.

5.   TRANSPORT LAYER :

Process to process delivery; UDP, TCP; Congestion control algorithm; Leaky bucket algorithm, Token bucket algorithm, Choke packets; Qualit of service; Techniques to improve Qos.

6.   SESSION LAYER :

Functioning of session layer, OSI primitives.

7.   APPLICATION LAYER :

DNS;SMTP;SNMP;FTP; HTTP & WWW; Security; Cryptography, Use authentication, Security protocols in internet Firewalls

8.   EMERGING TECHNOLOGIES IN NETWORKING :

ISDN services and ATM; DSK technology, Cable modem, Sonet wireless LAN: IEEE 802.11; Introduction to blue-tooth, VLAN's, Cellular telephony and Satellite network.

Text Books

1.   B. A. Forouzan - Data Communication and Networking (3 Ed.) – TMH.

2.   A. S. Tanebaum - Computer Networks (4 Ed.) – Pearson Education/ PHI.

3.   W. Stallings - Data and Computer Communication (5 Ed.) – Pearson Education/ PHI.

LIST OF PRACTICALS

1.   Identification of various networks components

29

-    Connection, BNC, RJ-45, I/O box
-    Cables, Co-axial, twisted pair, UTP
-    NIC (Network Interface Card)
-    Switch, Hub

2. Sketch wiring diagram of network cabling considering a computer lab of 20 systems.
3. Interfacing with the network card (Ethernet)
4. Preparing of network cables.
5. Establishment of a LAN
6. Use of protocols in establising LAN
7. Trouble shooting of networks.
8. Installation of network device drivers.
9. Installation of networks (Peer Networking client server interconnection.
10. Use/installation of proxy server.

Corrected and Approved By B.T.E. on Dated 19-04-2017

2.3 WEB TECHNOLOGY – I
(Common to Computer Science & Engineering, Diploma In Information Technology)

```
                                       L    T    P
                                       4    -    4
```

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Topic 1	10	-	-
2.	Topic 2	14	-	-
3.	Topic 3	14	-	-
4.	Topic 4	8	-	-
5.	Topic 5	10	-	-
		56	-	56

1.   HTML :

Elements of HTML, HTML sources and Rules of nesting, Syntax conventions, HTML categories, Text tags, Formatting Web Pages bys using styles, Additing pictures, Image attribute, introduction to forms, tables and models, adventages and limitations of tables, frames, link, CSS cascading style sheets, XHTML, XML, Cient side scripting, Server side scripting, Managing data with SQL.

2.   JAVA SCRIPTS:

What is Java scripts, adding, Java scripts to documnets, embedding Java scripts, Linking Java scripts, Creating a page program with scripts, What is Java and its appletes to make webpage run server scripts, active X.

3.   XML :

Introduction to XML, Difference between XML and HTML, Use of XML, XML Syntax Rules, XML Elements, XML attribute, XML name space, Displaying XML, XML validator, XML applicaiton, RSS FEED,JSON.

4.   CSS :

CSS Introduction, CSS Syntex, CSS selectors : Element SElector, id Selector, Class Selector, Grouping Selectors, Implementing CSS, Jquery, Image Formate (JPG, PNG, GIF).

5.   DHTML :
DHTML Introduction, DHTML - JAVA Script, DHTML - HTML DOM, DHTML - HTML Events, DHTML - CSS.

LIST OF PRACTICALS

31

Corrected and Approved By B.T.E. on Dated 19-04-2017

1.   Exercises on to static web sites.

2.   Development of different web sites using open source tools

Corrected and Approved By B.T.E. on Dated 19-04-2017

(Common to Computer Science & Engineering, Diploma In Information
Technology)

```
                                    L    T    P
                                    5    -    5
```

Rationale :

       For solution of different problems 'C' is a very
powerful high level language. It is widely used in research
and engineering problems. A software technician aware of
this language will be useful for working in computer
environment.

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Basic Concepts.	6	-	
2.	Lists	12	-	
3.	Stacks And Queues	10	-	
4.	Sorting & Merging	10	-	
5.	Tables	10	-	
6.	Trees	12	-	
7.	Graphs	10	-	
		70	-	70

DETAILED CONTENTS

1. BASIC CONCEPTS:

1.1   Problem solving concept, top down and bottom up design,
    Structured programming, concept of data type, variable
    And constants, Concept of pointer variable and constant,
    Introduction to data structure(Linear, Non Linear, Primitive,
    Non Primitive), Concept of data structure(Array, Linked list
    Stack, Queue, Trees, Graphs).

1.2   Arrays : Concept of arrays, single dimensional array, Two
    Dimensional array Representation of two dimensional array
    (Base address, L.B., U.B), Operation of arrays with
algorithms
    (Searching, traversing, inserting, deleting)

2. LISTS:

    Introduction to linked list and double linked list,
Representation
    Of linked lists in memory, comparsion between linked list and
    Array, Traversing a link list, Searching a link list,
Insertion
    And deletion into linked list(Ar first node, Specified
Position,
    Last node), Application of link list, Doubly linked lists,

33

Triversing a doubly link lists, Insertion and deletion into doubly
        Link list.

3.   Stacks And Queues

        Introduction to stacks, representation of stacks with array
and link
        List, Implementation of stacks, Application of stacks (Polish
        Notations, converting infix to post fix notation, evaluation
of
        Post fix notation, tower of Hanoi), Recursion : concept and
        Comparsion between recursion and iteration, Introduction to
queues,
        Implementation of queues, Circular queues, De-queues

4.   SORTING ALGORITHMS

        Introduction, Search algorithm(Linear and Binary), Concept
        Of sorting.
        Insertion sorts, Bubble sort, Quicksort, Mergesort, Heapsort

5.   Tables: -

         Searching sequential tables,Hash tables and Symbol tables,
        Heaps.

6.   TREES

        Concept of Binary Trees (Complete, Extended Binary Tree),
Concept
        Of representation of Binary Tree, Concept of balance Binary
Tree,
        Traversing Binary Tree(Pre order, Post order and In
Order),Searching
        Inserting and deleting in binary search tree.

7. Graphs:
        Depths-first-search.

DATA STRUCTURE USING C

List of Experiments

1. Make a program to insert 10 elements in an array by taking user input.
2. Make a program that demonstrates deletion of elements from beginning, middle, last position from an array.
3. Make a program for merging of elements of two arrays.
4. Make a program that demonstrates PUSH operation of stack.
5. Make a program that demonstrates POP operation of stack.
6. Make a program to insert elements in a linear queue.
7. Make a program to insert elements in a circular queue.
8. Make a program that demonstrates the working of simple list for inserting elements at beginning position, middle position and at the end of list.
9. Make a program that demonstrates the working of circular list for inserting elements at beginning position, middle position and at the end of list.
10. Write a program for insertion sorting.
11. Write a program for bubble sorting.
12. Write a program for quick sort.
13. Write a program for merge sort.
14. Write a program for heap sort.
15. Make a program for binary search.
16. Make a program for linear search.
17. WAP to Create a Tree.
18. WAP to check whether a Tree is a Binary Search Tree.
19. WAP program to construct a B Tree.
20. WAP for Depth First Binary Tree Search

LIST OF BOOKS

1.   Data Structure - Schaum's Outline Series - McGraw Hill

2.   Data Structure - Schaum's Series - McGraw Hill
Publications

3.   Horwitz and Sartaj Sahni - Data Structure

4.   Tanenbaum - Data Structures - Prentice Hall of
India, New
      Delhi

5.   Kanekar Yashwant - Data Structure through C, BPB
Publication

3.1 JAVA PROGRAMMING
(Common to Computer Science & Engineering, Diploma In Information
Technology)

```
                                        L    T    P
                                        8    -    8
          TOPIC WISE DISTRIBUTION OF PERIODS
```

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Topic 1	8	-	-
2.	Topic 2	10	-	-
3.	Topic 3	12	-	-
4.	Topic 4	12	-	-
5.	Topic 5	12	-	-
6.	Topic 6	12	-	-
7.	Topic 7	12	-	-
8.	Topic 8	12	-	-
9.	Topic 9	10	-	-
10.	Topic 10	12	-	-
		112	-	112

1. Introduction and feature of Object Oriented Programming

2. An Overview of JAVA:-

   Introduction to Object Oriented Programming (two paradigms,
   abstraction, the three oops principles) creation of JAVA,
   JAVA Applits & applications, security & portability.

3. Data Types & Control statements:

   Integer,floating point type, character, boolean, all
   Operators, JAVA's selection statements,iteration and jump
   statement.

4. Classes & Methods:

   Class fundamentals, declaring objects, overloading methods &
   constructs,access control, nested and inner classes,
   exploring the string class.

5. Inheritance:

   Inheritance basics,member access and inheritance. Overriding
   : Method overriding, super kwyword, polymorphism and virtual
   function.

6. Packages and Interfece :

   Defining, Creating and accessing a package, Understanding
   CLASSPATH, Inporting packages, difference between classes

37

and interface, defining an interface, implementing interface, applying interface, variable in interface and extending interface, Exploring Java io.

7. Exception Handling :

    Concept of exception handling, benefits of exception handling, termination or resumptive models, exception hierarchy, usage of try, catch, throw, throws and finally, built in exceptions, creating won exception sub classes. string handling, exploring java.util.

8. Multithreading :

    Difference between multi threading and multi tasking, thread life cycle, creating threads, thread priorities, synchronizing threds inter thread communication, thread groups, daemon threads, enumerations, autoboxing annotations, generics.

9. Event Handling :

    Events, Evants sources, Event classes, Event Listeners, Delegation event model, handling mouse and key board events, Adapter classes. The AWT class hieracrchy, user interface components - labels, button, vanvas, scrollbars, text components, check box, check box groups, choice, list panels - scrollpane, dialogs, menubar, graphics, layout manager - layout manager types border, grid, flaow card and grid bag.

10. Applets :

    Concept of Applets, difference between applets and application, life cycle of an applet, types of applets, creating applets, passing parameters to applets.

    Swing - Introduciton, limitations of AWT, MVC architecture, components, containers, exploring swing- JApplet, JFrame and JComponent, Icons and Lables, text fields, button - the JButtion class, Check boxes, Radio buttons, Combo boxes, Tabbed Panes, Scroll Panes, Trees and Tables.

1. WAP to find the average and sum of the N numbers using command line argument.
2. WAP to demonstrate type casting.
3. WAP to find the number of arguments provide at run time.
4. WAP to test the prime number.
5. WAP to calculate the simple interest and input by users.
6. WAP to create a simple class to find out the area and perimeter of rectangle and box using super and this keyword.
7. WAP to find G.C.D. of the number.
8. WAP to design a class account using the inheritance and static that show all function of bank (withdrawal, deposite).
9. WAP to find the factoral of a given number using Recursion.
10. WAP to desing a class using abstract methods and classes.

11. WAP to design a string class that perform string method (equal, reverse the string, change case).
12. WAP to handle the exception using try and multiple catch block.
13. WAP that implement the Nested try statements.
14. WAP to create apackage that access the member of external class as wel as same package.
15. WAP that import the user defina package and access the member variable of classes that contained by package.

16. WAP that show the partial implementation of interface.
17. WAP to handle the user defined exception using throw keyword.
18. WAP to create a thread that implement the Runable interface.
19. WAP to implement Interthread communicaiton.
20 WAP to create a class component that show controls and event handling on that controls (math calculation).
21. WAP to draw the line, rectangle, over, text using the graphics method.
22. WAP to create a menu using the frame.
23. WAP to create a dialogbox.
24. WAP to implement the flow layout and border layout.
25. WAP to implement the grid layout, card layout.

LIST OF BOOKS

1. Core Java II Advanced Feature 8th Edition, Sun Microsystem
2. The Complete Reference JAVA Seventh Edition
3. Thinking in Java, Third Ediction, Bruce Eckel Pearson Eduction.
4. JAVA 6 By Rogers Cadenhead, Laura Lemay, Pearson Education.

Corrected and Approved By B.T.E. on Dated 19-04-2017

3.2 DATABASE MANAGEMENT SYSTEM
(Common to Computer Science & Engineering, Diploma In Information
Technology)

```
                                        L   T   P
                                        6   -   6
```

Rationale:

    Relational Database management system is the   modern
technique of managing data. The knowledge of DBMS is very useful
& effective in prepration of different types of application
software like Inventory, Financial & Accounting system etc. The
student equiped with knowledge of this subject will be useful in
the areas of the computer application.

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Topic 1	10	-	-
2.	Topic 2	10	-	-
3.	Topic 3	10	-	-
4.	Topic 4	10	-	-
5.	Topic 5	14	-	-
6.	Topic 6	10	-	-
7.	Topic 7	10	-	-
8.	Topic 8	10	-	-
		84	-	84

DETAILED CONTENTS

1. OVERVIEW OF DBMS :

    Data, Representation of Data, Record, Data item, Field name,
    File, Data and Information, Database (Properties), Benifits
    of Database approach, Database Management   System
    (Capabilities, Advantages, Disadvantages) and Functions of
    DBMS. Basic DBMS terminology (Data items, Entities and
    Attributes, Schama and Subschama, Database users, Instrance
    and Schanas). Three views of Data (External View, Conceptual
    View, Internal View), Three level architecture of DBMS, Data
    Independence.

2. DATA MODELS :

    Define data model, classify data model, Local Models :
    Object and Record based- Object Oriented Model- Entry
    relationship Models - Entity sets and relationship sets-
    Attributes - Keys in entity and relationship sets : (a)
    Super Key (b) Candidate Key (c) Primary Key (e) Unique Key -
    Mapping constraints.Object based logical models, E-R model,
    E-R diagram, Notations, Hierarchical Model   (Advantage,
    Disadvantages), Network model (Advantages, Disadvantages),
    Relational   Model   (Advantages,   Disadvantages),   Object

40

oriented database, Object oriented relational database.

3. RELATIONAL MODEL :

Advantages, Disadvantages, Codd's 12 rules, Definition of Relations, Degree and Cardinality, Relational Model Constraints (Domain, Tuple Uniquiness, Key Constraints, Integrity Constraints, Entity constraints). Relations algebra (Basic operation : Union intersection and difference), Additional Relational Abgebraic Operations (Projection, Selection rows, Division)

4. RELATIONAL DATABASE DESIGN :

Functional dependencies (I, II & III), Normal forms, Normalization, Boyce Codd Normal Form, Multivalued dependencis and Forth Normal Form, Join Dependencies and Fifth normal forms.

5. STRUCTURE QUERY LANGUAGE (SQL) :

SQL, Object naming conventions, Object naming guidelines, Data types (Varchar 2, Number, Long, Date, Raw, Long Raw, Rowid, Char etc.), Tables, Views, Indexes, SQL Commond :- DESCRIBE, SELECT, COLUMN ALIASES, CONCATENATION OPERATOR, DISTINCT CLAUSE, ORDER BY, WHERE CLAUSE, LOGICAL OPERATIONS, SQL OPERATORS, Accessing Metadata.

6. RATIONAL DATABASE :

Data definition language- Data mainpulation language- Relational algebra - Operators : Select, Project, Join, Rename, etc. - Simple example.

7. SECURITY :

Authorization and View- Security constraints - Integrity Constraints- Encryption.

8. PL :

User defined function, Control of flow statement of PL/SQL, Procedures/Stored procedures, transcation, triggers, cursors, granting and revoking.

LIST OF BOOKS

1. An Introduction to Database System - C. J. Date

2. Database System Concepts - A. Silberschatz & H. F. Korth

41

3.   Database Concepts and Systems - Lvan Bayroos/SPD

4.   Fundamental of Database System - R. Elmashri & S. B. Navathe

DATABASE MANAGEMENT SYSTEM LAB

STRUCTURED QUERY LANGUAGE

1.   Creating Database

-     Creating a database
-     Creating a table
-     Specifying relational data types
-     Specifying constraints
-     Creating indexes

2.   Table and Record Handling

-     INSERT statement
-     Using SELECT and INSERT together
-     DELETE, UPDATE, TRUNCATE Statement.
-     DROP, ALTER statement

3.   Retrieving Data From a Database

-     The SELECT statement
-     Using the WHERE clause
-     Using Logical Operators in the WHERE clause
-     Using In, BETWEEN, LIKE, ORDER BY, GROUP BY & HAVING clause
-     Using Aggregate Functions
-     Combining Tables Using JOINS

Corrected and Approved By B.T.E. on Dated 19-04-2017

(Common to Computer Science & Engineering, Diploma In Information Technology)

```
                                          L   T   P
                                          6   -   6
```

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Topic 1	20	-	-
2.	Topic 2	15	-	-
3.	Topic 3	15	-	-
4.	Topic 4	14	-	-
5.	Topic 5	20	-	-
		84	-	84

1. JAVA SERVLET :

    Introduction to Server Mangement (Using TOM Cat)

    Servlet introduction, working of servlet advantage of servlet, servlet terminology, introduciton to servlet API, Servlet interface, Generics Servlet class, Http servlet class, Life cycle of a servlet.

2. JSP :

    JSP introduction, JSP - Environment setup, JSP - Architecture, JSP- Life ccyle, JSP-syntex, JSP-Directive, JSP-Actions, JSP- Implicit objects, JSP - Client request, JSP - Server response, JSP intergration with database.

3. AJAX :

    AJAX Introduction, XMLHttp, Request object, server response, AJAX events, Validation, Intratation with API

4. CROSS BROWSER COMPATIBILITY :

    Introduction, Cross Browser compatibility issue, Fixing cross browser compatibility issue.

5. SESSION AND COOKIES :

    Introduction to session adn cookies, Session Management, Create and deletion of cookie with Java Script, Function to set a cookie, Function to get a cookie, Function to check and cookie.

LIST OF PRACTICALS

1. Exercises related to Java Servlet

Corrected and Approved By B.T.E. on Dated 19-04-2017

2.   Exercises related to JSP
3.   Exercises related to ASP.
4.   Exercises related to AJAX.
5.   Exercises related to Cross Browser Compatibility.
6.   Exercises related to Session and Cookies.

Corrected and Approved By B.T.E. on Dated 19-04-2017

3.4 E-COMMERCE

(Common to Post Diploma in Information Technology, Diploma In Computer Science & Engineering)

```
                                              L   T   P
                                              6   -   -
```

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Topic 1	8	-	
2.	Topic 2	8	-	
3.	Topic 3	8	-	
4.	Topic 4	8	-	
5.	Topic 5	10	-	
6.	Topic 6	10	-	
7.	Topic 7	10	-	
8.	Topic 8	6	-	
9.	Topic 9	8	-	
10.	Topic 10	8	-	
		84	-	-

1.   ELECTRONIC COMMERCE :

Overview, Definitions, Advantages and Disadvantages of E-commerce, threats of E-commerce, Managerial Prospective, Rules and Regulations For controlling E-commerce, Cyber Laws.

2.   TECHNOLOGY :

Relationship Between E-Commerce and Networking, Different Types of Networking For E-commerce, Internet, Internet and Extranet, EDI System Wireless Application Protocol : Definition, Hand Held Devices, Mobility and Commerce, Mobile computing, Wireless Web, Web Security, Infrastructure Requirement Form E-Commerce.

3.   BUSINESS MODELS OF E-COMMERCE :

Model based on transaction, Type, Model Based on Transaction Party -B2B, B2C,C2b, C2c, E-Governance.

4.   E-STRATEGY :

Overview, Strategic, Methods for developing E-commerce.

5.   FOUR C's:

Four C's (Convergence, Collaborative Computing, Content Management and Call Center)

6.   SUPPLY CHAIN MANAGEMENT :

E-logistics, Supply Chain Portal, Supply Chain Planning

46

Tools (SCP Tools), Supply Chain Execution (SCE), SCE-Framework, Internet's effect on Supply Chain Power.

7. E-PAYMENT MECHANISM :

    Payment through card system, E-Cheque, E-Cash, E-Payment Threats and protections.

8. E-MARKETING :

    Home-Shopping, E-Marketing, Tele-Marketing.

9. ELECTRONIC DATA INTERCHANGE (EDI):

    Meaning, Benifits, Concepts, Application, Edi Model.

10. RISK OF E-COMMERCE :

    Overview, Security for E-commerce, Security Standards, Firewall, Cryptography, Key Management, Passward system, Digital certificates, Digital signatures.

                         LIST OF BOOKS

1. E-Commerce-M. M. Oka- EPH
2. Electronic Commerce- Technologies & Application - Bhaskar Bharat - TMH
3. E-Commerce :Strategy Technologies and Applications - Tata McGraw Hill

4.1 COMPUTER BASED ACCOUNTING

```
                                      L   T   P
                                      6   -   6
```

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Topic 1	18	-	-
2.	Topic 2	15	-	-
3.	Topic 3	18	-	-
4.	Topic 4	18	-	-
5.	Topic 5	15	-	-
		84	-	84

DETAILED CONTENTS

1. INTRODUCTION TO TALLY :

    Installing Tally, Getway of Tally, Creating Company, Company
    Features (Accounting Features, Inventory Features, Statuory
    and Takation Features), Configuring Tally.

2. CREATING MASTERS IN TALLY :

    Creating Account Masters, account information, creating an
    account group, Ladger, Creating Ledgers, Creating Multiple
    Ledger, Creating Inventory Masters, Stock Groups, Stock
    items, Unit of measure, Vouchers type.

3. ENTERING VOUCHERS IN TALLY :
    Voucher types (Payment voucher, Reciept voucher, Contra
    voucher, Sales voucher, Purchase voucher, Journal voucher,
    Memo voucher), Simple voucher entry, Pure inventory voucher,
    Types of inventory vouchers.

4. TAX DEDUCTION AT SORUCE (TDS) :
    Introduction to TDS, Features of TDS in Tally, Flowchart of
    TDS, TDS accounts, TDS transactions, Configuring Tally for
    TDS, Creation of Masters, Voucher entry for TDS, TDS
    deduction voucher, Printint TDS challans.

5. VALUE ADDED TAX VAT :

    What is VAT. General terminologies used in VAT (Input tax,
    Output tax, Input credit, composite dealers), Advantages of
    VAT, Advances of VAT over sales tax, VAT rates, Computation
    of VAT, VAT documents, Ledger Masters, Sales   Ledger,
    Vouchers and transactions, VAt calculation.

Corrected and Approved By B.T.E. on Dated 19-04-2017

LIST OF PRACTICALS

1. Exercises Based on above all topics

Corrected and Approved By B.T.E. on Dated 19-04-2017

4.2 COMPUTER HARDWARE & MAINTENANCE

(Common to Diploma Computer Science & Engineering)

```
                                        L    T    P
                                        4    -    4
```

Rationale :

Servicing of computer peripherals and system such as Key Board, Disk Drives, Printers, Power Supplies and different stages of the computer results in increasing efficiency and life of the computer centre. A technician having skills of servicing the above peripherials and systems will prove useful for a computer centre.

TOPIC WISE DISTRIBUTION OF PERIODS

Sl.No.	Units	Coverage Time		
		L	T	P
1.	Topic 1	5	-	
2.	Topic 2	5	-	
3.	Topic 3	5	-	
4.	Topic 4	5	-	
5.	Topic 5	5	-	
6.	Topic 6	5	-	
7.	Topic 7	5	-	
8.	Topic 8	5	-	
9.	Topic 9	6	-	
10.	Topic 10	5	-	
11.	Topic 11	5	-	
		56	-	56

DETAILED CONTENTS

1. Component and peripharal devices, Connected with computer.

2. Mother Board : BUS, Mothre board components, Battery, Connections on the Mother Board, Keeping CPU cool, Mother board trouble shooting.

3. Key Board : Switches, Keyboard organization, Key board type trouble shooting.

4. Mouse : Mouse type, Connecting Mouse, Trouble shooting Mouse.

5. HDD : Magnetic recording, Data Encoding Method, HDD feature, Head barking, HDD trouble shooting.

6. Compact Disc Drive : CD-R, CD-W, CD-RW, DVD-R, DVD-RW, Blue Ray. Working and Maintenance.

7. Printers : Image formation method, Printing mechanism, DMP,

50

Ink Jet, Laser Printer, Multi functional printer. How printer works and Trouble shooting.

8. Network Devices: Hub, Switch, Router, Bridge, Gateway, Ethernet Card.

9. Scanner- Flat Bed.

10. External Devices- Pen Drive, Flash Drive, External Hard Disk.

11. Power Supply : Operating charactersics, Types and maintenance.

HARDWARE MAINTENANCE

List Of Practicals

(I)   Study of devices on motherboard

(II) Study of Key board & Keyboard decoder

(III) Study of Video Adopter & display controllers

(IV) Study of Floppy Drive, CD Drive and Hard Disk.

(V)   Study of Multifunction Input/Output controllers

2. Troubleshooting & repair of following equipment

(I)   Dot Matrix Printer, Laser, Inkjet Printer.

(II) Digital Plotter

(III) C. P. U.

(IV) Disk Drive

3. Study and Trouble Shooting of

(I) Network

(II) Power Supplies.

51

Corrected and Approved By B.T.E. on Dated 19-04-2017

4.3 ENVIRONMENTAL EDUCATION & DISASTER MANAGEMENT

```
                                       L  T  P
                                       4  -  -
```

RATIONALE:

A diplima student must have the knowledge of different types of pollution caused due to industrialisation and construction activities, so as he may help in balancing of eco-system and control pollution by providing controlling measures. They should be also aware of the environmental laws for effectively controlling the pollution of environment. The topics are to be taught in light of legislation Para-3.

TOPIC WISE DISTRIBUTION OF PERIODS:

SL. NO.	TOPIC	L	T	P
1.	Introduction	6		
2.	Pollution	4		
2.1	Water Pollution	8		
2.2	Air Pollution	8		
2.3	Noise Pollution	4		
2.4	Radio Active Pollution	6		
2.5	Solid Waste Management	6		
3.	Legislations	4		
4.	Environmental Impact Assessment	4		
5.	Disaster Management	6		
	TOTAL	56	-	-

DETAILED CONTENTS

1.   INTRODUCTION :

-    Basics of ecology, Ecosystem, Biodiversity Human activities and its effect on ecology and eco system, different development i.e. irrigation, urbanization, road development and other engineering activities and their effects on ecology and eco system, Mining and deforestation and their effects.

-    Lowering of water level , Urbanization.

-    Biodegradation and Biodegradibility, composting, bio remediation, Microbes .Use of biopesticidies and biofungicides.

-    Global warning concerns, Ozone layer depletion, Green house effect, Acid rain,etc.

2.   POLLUTION :

Sources of pollution, natural and man made, their effects on

52
Corrected and Approved By B.T.E. on Dated 19-04-2017

living environments and related legislation.

2.1   WATER POLLUTION :

-     Factors contributing water pollution and their effect.

-     Domestic waste water and industrial waste water. Heavy
      metals, microbes and leaching metal.

-     Physical, Chemical and Biological Characteristics of waste
      water.

-     Indian Standards for qulity of drinking water.

-     Indian Standards for quality of treated waste water.

-     Treatment methods of effluent (domestic waste water and
      industrial/ mining waste water), its reuse/safe disposal.

2.2   AIR POLLUTION :

      Definition of Air pollution, types of air pollutants i.e.
      SPM, NOX, SOX, GO, CO2, NH3, F, CL, causes and its effects
      on the environment.

-     Monitoring and control of air pollutants, Control measures
      techniques. Introductory Idea of control equipment in
      industries i.e.

      A. Settling chambers
      B. Cyclones
      C. Scrubbers (Dry and Wet)
      D. Multi Clones
      E. Electro Static Precipitations
      F. Bog Fillers.

-     Ambient air qulaity measurement and their standards.

-     Process and domestic emission control

-     Vehicular Pollution and Its control with special emphasis of
      Euro-I, Euro-II, Euro-III and Euro IV.

2.3   NOISE POLLUTION :

      Sources of noise pollution, its effect and control.

2.4   RADISACTIVE POLLUTION :

      Sources and its effect on human, animal, plant and material,

53
Corrected and Approved By B.T.E. on Dated 19-04-2017

means to control and preventive measures.

2.5 SOLID WASTE MANAGEMENT :

Municipal solid waste, Biomedical waste, Industrial and Hazardous waste, Plastic waste and its management.

3. LEGISLATION :

Preliminary knowledge of the following Acts and rules made thereunder-

- The Water (Prevention and Control of Pollution) Act - 1974.

- The Air (Prevention and Control of Pollution) Act - 1981.

- The Environmental Protection (Prevention and Control of Pollution) Act -1986. Rules notified under EP Act - 1986 Viz.

    # The Manufacture, Storage and Import of Hazardous Chemical (Amendment) Rules, 2000

    # The Hazardous Wastes (Management and Handling) Amendment Rules, 2003.

    # Bio-Medical Waste (Management and Handling) (Amendment) Rules, 2003.

    # The Noise Pollution (Regulation and Control) (Amendment) Rules, 2002.

    # Municipal Solid Wastes (Management and Handling) Rules, 2000.

    # The Recycled Plastics Manufacture and Usage (Amendment) rules, 2003.

4. ENVIRONMENTAL IMPACT ASSESSMENT (EIA) :

- Basic concepts, objective and methodology of EIA.

- Objectives and requirement of Environmental Management System (ISO-14000) (An Introduction).

5. DISASTER MANAGEMENT :

Definition of disaster - Natural and Manmade, Type of disaster management, How disaster forms, Destructive power, Causes and Hazards, Case study of Tsunami Disaster, National

54

policy- Its objective and main features, National Environment Policy, Need for central intervention, State Disaster Authority- Duties and powers, Case studies of various Disaster in the country, Meaning and benifit of vulnerability reduction, Factor promoting vulnerability reduction and mitigation, Emergency support function plan.

Main feature and function of National Disaster Management Frame Work, Disaster mitigation and prevention, Legal Policy Frame Work, Early warning system, Human Resource Development and Function, Information dissemination and communication.

Corrected and Approved By B.T.E. on Dated 19-04-2017

4.4 (i)PROJECT WORK

```
L   T   P
-   -   8
```

1. OBJECTIVES

    1. To provide experience of solving practical problems.

    2. To provide synthesis of knowledge to solve problems.

    3. To provide group working environment.

2. NATURE OF THE PROJECTS

    The project should be a group project, preferably of interest to industry. The students should be encouraged to select the project while on visits to such industry. The project should be supervised by the teacher or the expert from industry jointly. The project work should involve designing the application system and implementing it on any of the computer systems available.

    At the end of the project, the student is expected to prepare report. The evaluation should be based on:

    1. Continuous assesment of the work done by the student;

    2. Project report, and

    3. Viva-Voce.

4.4 (ii)INDUSTRIAL TRAINING

(One month After I YEAR during summer vacation)

OBJECTIVES :

TO enables the student to ;

1.   experience the real life computer environment.

2.   see the practical problems and the process of their solution.

3.   work in groups.

4.   find suitable problem of interest for project work.

The industrial training will be of 8 weeks duration. It should be organised at the end of the course.

The industrial training may be organised at reputed large computer centres where scientific/commercial data processing jobs are being done. The training schedule may be drawn in such a way that the student may observe the work of the system analysts, the system programmers and the operators. They may also study the environment of the computer centre, the job flow and the associated procedures. Special attention should be paid so that the students may observe the documentation and organisation of the computer centre activities.

The students should prepare a report on the industrial training. The report and the viva-voce of the industrial training along with the assessment of the training supervisors of the industry and the teacher monitoring the training shall form the basis of award of marks.

4.4 iii)   SEMINAR

Seminar will be organised for all students individually on Computer
based Topic by Internal Examinar.

Corrected and Approved By B.T.E. on Dated 19-04-2017

```
                POST GRADUATE DIPLOMA IN COMPUTER APPLICATION
                              STAFF STRUCTURE


Intake of the Course                        60
Pattern of the Course                       Semester System

-------------------------------------------------------------------
Sl. No.          Name of Post               No.
-------------------------------------------------------------------

1.               H.O.D.                     1

2.               Lecturer                   6

3.               Computer Programmer/       3
                 Computer Operator
```

1.   The staff required for the each institution shall be worked
     out in accordance with the norms laid down in G.O. No.
     2281/Pra. Shi.-3-1989-60(B)/85 Dated June 27, 1989

2.   Services of other discipline staff of the Institute may be
     utilized if possible

     QUALIFICATIONS OF STAFF : as per service rules

Corrected and Approved By B.T.E. on Dated 19-04-2017

SPACE REQUIREMENT

1.   Computer Centre   150 Sq. m.

2.   Hardware Maintenance Room   120 Sq. m.

3.   H. O. D.'s Room   15 Sq. m.

4.   Lecture's Room (4 Nosx10 Sq.m.)   40 Sq. m.

5.   Class Rooms/Tutorial   120 Sq. m.
     (2 Nos. x 60 m2
                        TOTAL   445 Sq. m.

     Additional 40% for wall   120 Sq. m.
     Passage Laboratory, etc.

Corrected and Approved By B.T.E. on Dated 19-04-2017

LIST OF EQUIPMENT

1.   Only those of the equipments given below which are
      essentially required for performing the practicals mentioned
      in the curriculum are to be procured by the institutions.

COMPUTER CENTRE

S.No.	DESCRIPTION	QTY.	APPROX. COST (in Rs.)
1.	Core-2 Quad Processor, 4GB RAM 1 GB SATA HDD, 19" TFT Mointor OS-Windows 2007/2008/Latest Version	02 Server	1,20,000=00
2.	General Desktop Computer-Intel i5 60 node or Higher, 2GB RAM, 320 GB SATA HDD, 17" TFT/LCD/LED Monitor, DVD Wirter Multi Media Kit with Speakers & Microphone Key Board-Multimedia, Mouse- Optical Scroll or Latest, 32 Bit PCI ETHERNET CARD (10/100) Mbps, Internet Modem, Pen Drive 16 GB, Pre loaded Windows 2007/2008/latest Pre Loaded Latest Anti Virus with Life time Subscription, Licence Media and Manual with UPS 660 VA		36,00,000=00

OR

        Computer of latest Specification

| 3. | Lap Top (Latest Version) with damage Warranty & 3 Hour backup battery | 04 | 250000.00 |
| 4. | Software (With Licence): | | LS |

        i.   ORACLE 11i/My SQL 5.5 or Latest Window
              based (30 users) & Development (Latest)
        ii.   VISUAL STUDIO (Professional 2012)
        iii. MS OFFICE 2010
        iv.   COMPILER 0 'C', C++, JAVA-7
        v.   Unix & Linux - Red Hat/UBUNTU/Fedora or
              Latest
        vi.   Page Maker, Corel Draw(Full Package),
              Adobe Reader, Adobe Dream Weaver CS6, Flash
              Photoshop, Net Beams
        vii. Tally ERP 9
        viii. Personal Web Server, HTML, IIS

| 5. | Hardware | 5,00,000.00 LS |

        i. Switch-32 Port   02
        ii. Router   02
        iii.Hub   04(8 Port)
        iv. Ext. Modem   02
        v. Wireless N/W Adaptor   02
        vi. Series Access Point   02

Corrected and Approved By B.T.E. on Dated 19-04-2017

```
       vii.LAN Cable Meter                         05
       viii. LAN Cable Analyzer                    05
       ix.   LAN Trainer Board                     05
       x.   DATA Communication Trainer Board       05
       ix.  Crimping  Tool                         15
            and all other accessories related to
            Networking
6.   Scanner- Flat Bed A4/Auto Lighter       02  20,000
     (Bit depth 48)

7.   132 Column 600 CPS or faster            02  50,000
     9 Pin dot matrix printer with
     500 million character head life

8.   Laser Jet-A4 All In one 20 page         04  10,000
     per min (2 Each)

9.   Desk Jet-A4 Photo Smart (2 Each)        04  40,000

10.  5 KVA on line UPS with minimum          04  8,00000
     30 miniute battery backup along
     with sealed maintenance free
     batteries. Provision for connecting
     external batteries with network
     connectivity.(For 2 Labs)

11.  Split   Air  Conditioner  1.5   tones   08 35,0000
     capctity with ISI mark alongwith
     electronic voltage stablizer with
     over viltage and time delay circuit

12.  Room preparation and furniture          LS

13.  19" rack, 24-port switch. connector RJ-45  LS 10,0000
     Cat-6 cabling for network

14.  2 KVA Inverter Cum UPS                  02  6,0000

15.  Digital Camera (Latest Version)         01  20000

16.  Fire Extinguisher (2 Kg.)               04  15000

17.  Fire Extinguisher (5 Kg.)               04  25000
18.  Vaccum Cleaner                          02  25000
19.  LCD Projector 3000 Lumen  with all      02  350000
     accessories
20.  Pen Drive 16 GB                         10  10000
21.  DVD Writer External                     02  10000
22.  HDD External 500 GB                      02  15000
23.  PAD (Latest Configuration)              02  15000
24.  Boardband For Internet(Speed Min. 8mbps) 04   LS
25.  USB Modem                               02   8000
26.  Generator 15 KVA Water Coolent          01  450000
```

NOTE : All the above items should be equally distributed in the 2 computer centres

Corrected and Approved By B.T.E. on Dated 19-04-2017

HARDWARE MAINTENANCE & PROJECT LAB

S.No.	Descirption	Qty.	Approximate Cost.
1.	Digital Multimeter3 1/2 to 4 1/2 digits, 1000 Volt DC, 2 Mega Ohm range, Resistance, capacitance, Freq., Diode, transistor, Continuity testing, AC/DC Change	15	55,000
2.	Power Supply Regulated/ transistorized 0-30 V	15	50,000
3.	Intel i5 or Highere-2 Processor 2 GB RAM, 320 GB HDD, or Higher,CD/DVD Drive	15	1000000
4.	Printer (600 cps) a) Dot Matrix b) Desk Jet c) Laser	3 Each	200000
5.	Constant Voltage Transformer	5	50,000
6.	PC Card Sets (One Mother Board, 4 Cards)	5	50,000
7.	Spike Buster	15	20,000
8.	Trainer Board i. To demonstrate asse- mbly & working of multimedia computer system ii.To study mother board with different chip set and processor iii To study Hard Disk (SATA/IDE) iv.To study construction and working of TFT/ LCD/LED monitor v. To study dot-matrix, Ink Jet, Laser Jet Printer	05 Set of each Board	500000
9.	Tool Kit	15	75000

Corrected and Approved By B.T.E. on Dated 19-04-2017

7.   LEARNING RESOURCE MATERIALS

1.	LCD Projector with Screen	1	--	20000
2.	Handicam	1	--	30000
3.	Cutting, Binding & Stitching equipment.	1	--	30000
4.	Desk Top Computer with Internet Core i5/i7- 760, Processor, Genuine Windiw 7, Professional 18 inch HD, Flat Panel Monitor Optical Mouse, Key Board & all related media or latest version	1	--	40000
5.	Home Theater Support Disc type CD. CDR/CDRW DVDR/DVDRW, VCD Supported with USB Port Support-DIVX/JPEG/MP3	1	--	25000
6.	Commerical P A System 16 W-220W output, AC & 24V DC Operated, 5 Mic. & 2 Auxilary input, Speaker output 4 Ohm, 8 Ohm, 17 V & 100 V	1	--	20000
7.	Interactive Board	1	--	50000

ote :

1.   This center will be only one at the institute level irrespective of all branches.

63

Corrected and Approved By B.T.E. on Dated 19-04-2017

INSTITUTE OF RESEARCH,DEVELOPMENT AND TRAINING,U.P.,KANPUR-208024

SUBJECT: Questionnaire for ascertaining the job potential and
           activities of diploma holders in Computer Applications

PURPOSE: To design and develop One & Half Year   diploma
          curriculum in Computer Applications

NOTE: 1.Please answer the questions to the point as given in
          the questionnaire.
          2.Any other point or suggestion not covered in this
          questionnaire may be written on a separate paper and
          enclosed with the questionnaire.

1.Name of the organisation:_____
                           _____

2.Name & Designation of the officer _____
  filling the questionnaire   _____

3.Name of the department/section/   _____
  shop   _____

4.Important functions of the   _____
  department/section/shop   _____

5.Number of diploma holder employees
  under your charge in the area of _____
  Computer Application

6.Please give names of modern equipment/machines handled by a
  diploma holder in Computer Application

       1.   2.   3.

       4.   5.   6.

7.What proficiencies are expected from a diploma holder in
  Computer Application

       1.   2.   3.

       4.   5.   6.

8.Mention the approximate percentage of the following desired in
  Diploma teaching.

   1. Theoretical knowledge   -------------%

64

Corrected and Approved By B.T.E. on Dated 19-04-2017

2. Practical knowledge   -------------%
    3. Skill Development   -------------%

9. Do you think " on the job training" / Industrial training
   should form a part of curriculum.   (Yes/ No)
   if yes then
   (a) Duration of training   --------------
   (b) Mode of training   1. Spread over different semesters

                                2. After completion of course

                                3. Any other mode

10. What mode of recruitment is followed by your organisation.

    1. Academic merit
    2. Written test
    3. Group discussion
    4. Interview
    5. On the job test.

11. Mention the capabilities/ Qualities looked for while recruiting
    diploma holders in Computer Applications
    (a) Technical knowledge   ------------
    (b) Practical skill   ------------
    (c) Etiquette and behaviour   ------------
    (d) Aptitude   ------------
    (e) Health, habit and social background   --------------
    (f) Institution where trained   --------------

12. Does your organisation have   Yes/No
    any system for the survey of Home
    articles of different countries/States.

13. Does your organisation conduct field   Yes/No
    survey to know users views regarding:
    1. Home Articles for different
       age groups and sex.
    2. Effect of climatic conditions
    3. Any other
       If yes, Please give brief account of each.

14. Which type of assignment do you suggest for an entrepreneur
    in Computer Applications

15. In which type of organisation can a diploma holder in
    Computer Applications can work or serve.

    1   2   3

    4   5   6

16. Job prospects for the diploma holders in Computer
    Applications during the next ten years in the state /
    country.

17. In your opinion what should be the subjects to be taught to a
    student of diploma in Computer Applications

65
Corrected and Approved By B.T.E. on Dated 19-04-2017

Theory   Practical

18.   Kindly mention particulars regarding topics/areas which
      should be given more emphasis in the curriculum .

      Theory   Practical

19.   Kindly state whether your organisation   Yes/ No
      can contribute towards improvement of
      curriculum in above field.
      If yes, Please give names of the experts available in your
      organisation to whom contact.

20.   Kindly give your valuable suggestions for being
      considered at the time of finalisation of curriculum.

21.   What changes in technologies are to be incorporated
      in the development of curriculum in Computer Applications

                              (Signature)

      Kindly mail the above questionaire duly filled into:-

              Gaurav Kishor Kanaujiya
              Lecturer-IT
              Institute of Research,Development & Training,U.P.
              Kanpur-208024

(Please note that all information in this survey is confidential &
for the use of curriculum design only)

Corrected and Approved By B.T.E. on Dated 19-04-2017

All the students of final year after their annual Examination shall undergo Industrial Training for a period of four weeks in industries dealing with computers. It will, in all respect,end by the end of summer vacation. It will be arranged and supervised by the institute staff . The performa for preparing a report of his stay. There in the industry (as given below) can be taken as a guide line for the purpose.

1. Name & Address of the organisation

2. Nature of the industry and its activity.

3. Date of

    i. Joining

    ii. Leaving

4. Details of the sections of the industry visited.

    i. Name of machines, peripherals in use.

    ii. Activities of the section

    iii. Study of the computers, peripherals used at the computer centre.

    iv. P. C. Software used in at the computer centre.

    v. Names of the high level languages and their study used at the computer centre.

    vi. Computer centre preventive maintenance.

    vii. Study of software package developed by the student.

Corrected and Approved By B.T.E. on Dated 19-04-2017